



Barton Bendish, East Anglia U.K. Validation Site Progress and Plans



Fieldwork Investigators:

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- University of Wales Swansea -

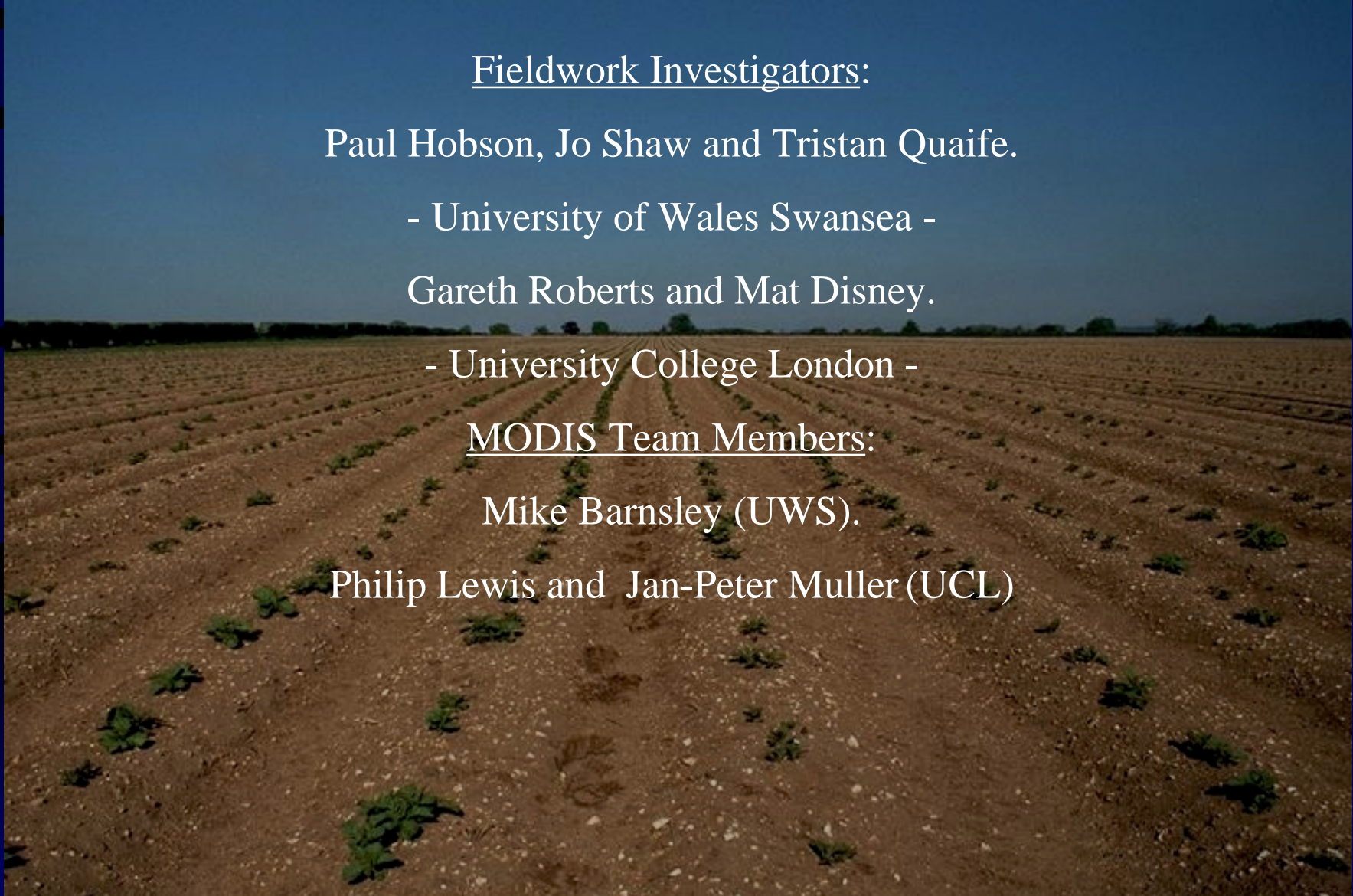
Gareth Roberts and Mat Disney.

- University College London -

MODIS Team Members:

Mike Barnsley (UWS).

Philip Lewis and Jan-Peter Muller (UCL)





Barton Bendish Site Location



The site is north of
Cambridge close to
F.C.-managed
Thetford Forest





Utilisation of 1999 fieldwork data



Landsat 5 TM scenes of East Anglia with land cover mapping sites indicated by red squares.
(11th July 1999)

Method

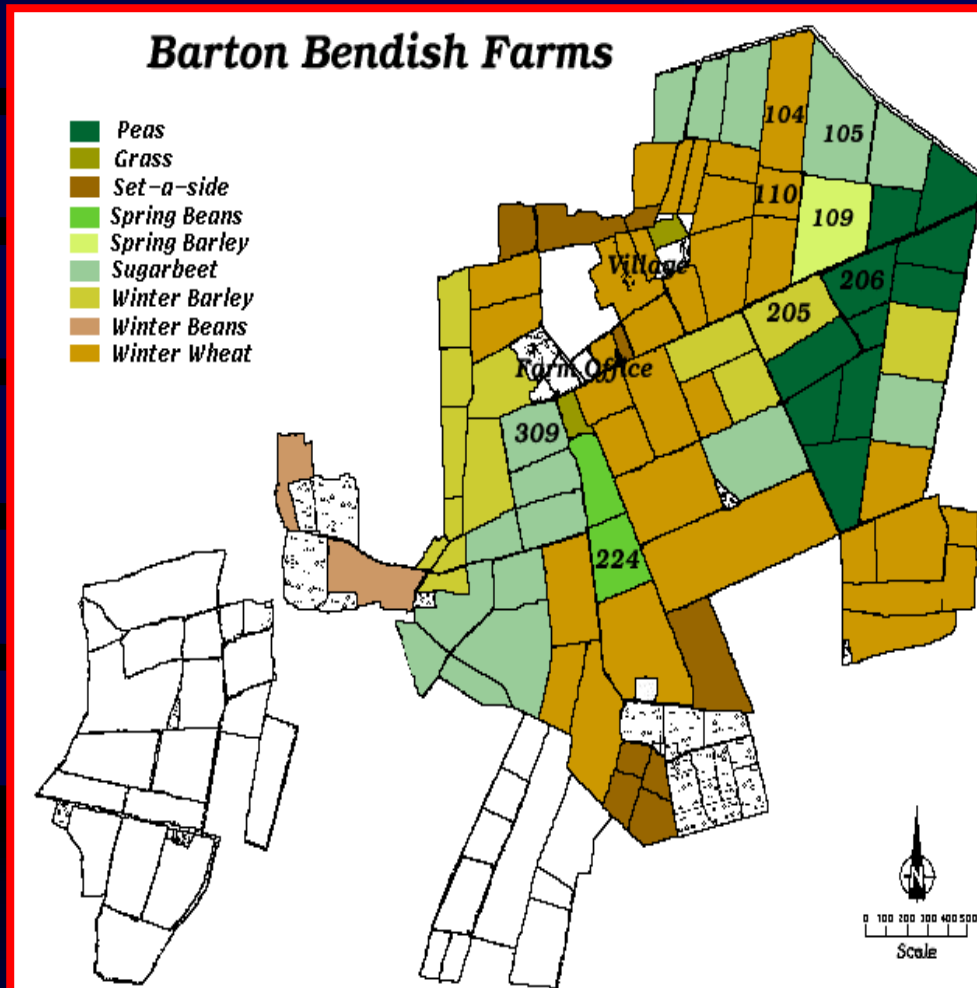
- TM data being used to land cover map East Anglia
 - ground data collected at sites across the region.
- map ground measured parameters to l-cover map
 - spatial extrapolation methods.

Results

- Performed land cover mapping.
- Purchasing '99 TM/ETM+ data (left) for 2 dates - July and September.
- Complete in the next few months



EOS Core Validation Site : Barton Bendish, Norfolk, UK



Map of Barton Bendish (BB) farm indicating cover type and those fields where measurements are taken (denoted by a field number).

- **Site characteristics**
 - heterogeneous at moderate resolution
 - negligible relief
 - limited number of agricultural cover types
- **Measured parameters**
 - LAI (LAI-2000)
 - Albedo (Kipp and Zonen CNR-1 net radiometer)
 - % cover (35mm photography 50mm and hemispherical lenses)
 - Radiometry (ASD FR and PSII)
 - atmospheric parameters (Cimel Sunphotometer from NERC EPFS)
- **Other information**
 - yield
 - crop varieties and planting dates
 - some treatment data



Field measurements made during the 1999 campaign

Date of collection	Location	Cover type	Measurements
14/04/99	Farm Office	-----	Cimel
15/04/99	Field 110	Winter Wheat	LAI
19/04/99	Farm Office	-----	Cimel
19/05/99	Fields 205, 206, 110 and Farm Office	Winter Barley, Peas, Winter Wheat	Albedo, LAI, radiometry and Cimel
20/05/99	Fields 309, 109, 224 and Farm Office	Sugarbeet, Spring Barley and Spring Beans	Albedo, LAI, radiometry, % cover and Cimel
26/05/99	Fields 224, 206, 205 and Farm Office	Spring Beans, Peas and Winter Barley	Albedo, LAI, radiometry, % cover and Cimel
27/05/99	Fields 105, 109, 104, 110, 224, 309 and Farm Office	Sugarbeet, Spring Barley, Winter Wheat and Spring Beans	Albedo, LAI, radiometry, % cover and Cimel
23/06/99	Fields 206 and 205	Peas and Winter Barley	LAI and %cover
24/06/99	Fields 224, 309, 105, 109, 104 and 110	Sugarbeet, Spring Beans, Spring Barley and Winter Wheat	LAI and %cover
30/06/99	Fields 105, 109, 206, 205, 110, 104, 224, 309 & Farm Office	Sugarbeet, Spring Barley, Winter Barley, Winter Wheat, and Spring Beans	LAI, Cimel , radiometry and albedo
21/07/99	Fields 309, 224, 206 and 205	Sugarbeet, Spring Beans, Peas and Winter Barley	LAI and differential GPS at measurement locations
22/07/99	Fields 105, 110, 109 and 104	Sugarbeet, Winter Wheat, and Spring Barley	LAI and differential GPS And measurement locations

Note : the measurements given may not be available for each field on the given date, summaries are available @ <http://ggpooh.swan.ac.uk/research.php3>



Image data for `99 season

SPOT 4 VEGETATION

Number images = 478

Latitude = 30N to 60N

Longitude = -11E to 11E

Projection = UTM

First date = 17/5/1999

Last date = 01/10/1999

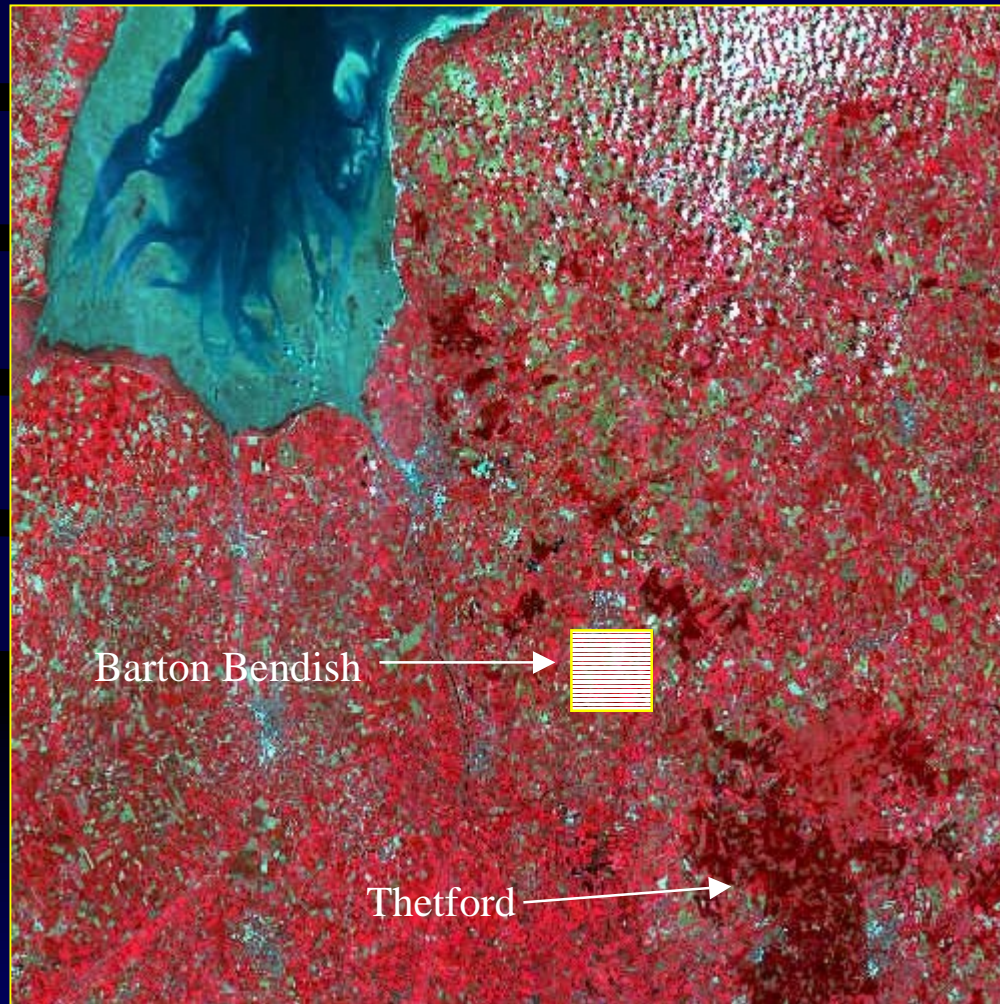
AVHRR HRPT

(Still to be delivered from NERC)

Cloud-free composite SPOT4-VGT data



Planned data buy for `99/00 season



- 1 * TM 5 floating scene (Jul. 99) - awaiting delivery
- 2 * ETM+ scene (Sept. 99) - awaiting delivery
- 2-3 ETM+ scenes for `00 season on top of provision from MODLAND
- Poss. SPOT-HRVIR scene
- (with provision of 1 * ETM+ and 1 * Ikonos scene)

SPOT-4 HRVIR FCC July 11th 1999



`00 Fieldwork Plans

- Sampling through growing season (April - August)
 - on site for 2 weeks every month **OR**
 - on site for 2/3 months during height of growing season;
 - measurements and sampling as for `99 growing season;
 - land cover
- Airborne campaigns planned for April/May and June/July (proposal under consideration)
 - multi-angular data (ATM) and VIS/NIR hyperspectral (CASI)
 - use airborne data to provide independent estimates of BRDF and spectral/broadband albedo.



'00 Fieldwork Plans

- Proposal submitted for X, C, L band polarimetric SAR (ESAR) and 350-2500nm hyperspectral (HYMAP) and LiDAR during either April/May or June/July
- Airborne data to be used in providing independent estimates of the BRDF, broadband and spectral albedo over a 5 * 5km area for validation. Also used to map biophysical parameters to examine scaling issues and validate LC classification.
- In addition to data purchased from MODLAND, further ETM+ scenes will be purchased to provide a temporal dataset through the growing season.
- GSFC/Aeronet Cimel *in situ* (should be running off mains electricity after problems with batteries)



Further Information

Database connections, current status, plans *etc.* are being made available online @

<http://waimea.swan.ac.uk/>

Established links for past work can be found @

<http://ggpooh.swan.ac.uk>

<http://ggentoo.swan.ac.uk>

<http://www.geog.ucl.ac.uk/~groberts/>